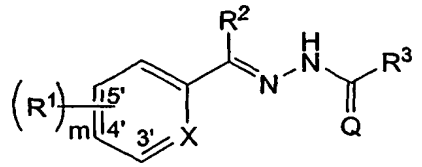
WHAT IS CLAIMED IS:

1. A compound having the formula:



(I)

wherein

Q is a member selected from =S and =O;

m is an integer from 1 to 3;

X is a member selected from =CH- and =N-;

R^1 is a member independently selected from hydrogen, Br, unsubstituted alkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, $-OR^{1A}$, and $-NR^{1B}R^{1C}$, wherein

R^{1A} is a member selected from (C_3-C_{10}) unsubstituted alkyl, substituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl;

R^{1B} and R^{1C} are members independently selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl;

R^2 is substituted or unsubstituted alkyl;

R^3 is a member selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, $-SR^{3A}$, and $-NR^{3B}R^{3C}$, wherein

R^{3A} is a member selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl, and

R^{3B} and R^{3C} are members independently selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl, wherein

R^{3B} and R^{3C} are optionally joined together to form a substituted or unsubstituted ring with the nitrogen to which they are attached;

wherein if m is 1 and R^1 is Br, then at least one of R^{3B} and R^{3C} is selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl; and

wherein if R^1 is hydrogen and Q is =S, then R^3 is not $-NR^{3B}R^{3C}$.

2. The compound of claim 1, wherein

m is 1;

R^1 is a member selected from hydrogen, Br, substituted or unsubstituted aryl, $-OR^{1A}$, $-NR^{1B}R^{1C}$, and $-L^1NNHC(S)NH_2$, wherein

R^{1A} is substituted or unsubstituted aryl,

R^{1B} is hydrogen,

R^{1C} is substituted or unsubstituted aryl, and

L^1 is a member selected from substituted or unsubstituted alkylene and substituted or unsubstituted heteroalkylene;

R^2 is methyl; and

R^3 is a member selected from $-SR^{3A}$, and $-NR^{3B}R^{3C}$, wherein

R^{3A} is a member selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, and

R^{3B} and R^{3C} are members independently selected from hydrogen, substituted or unsubstituted alkyl, wherein

R^{3B} and R^{3C} are optionally joined together to form a substituted or unsubstituted ring with the nitrogen to which they are attached, wherein said ring is a member selected from substituted or

unsubstituted piperidyl, substituted or unsubstituted piperizyl, and substituted or unsubstituted pyridyl.

3. The compound of claim 1, wherein

m is 1;

R^1 is a member selected from hydrogen, substituted or unsubstituted phenyl, substituted or unsubstituted -NH-phenyl, and substituted or unsubstituted -O-phenyl, wherein

R^1 is attached to the 3'-position or the 4'-position;

R^2 is methyl; and

R^3 is a member selected from $-NH_2$, substituted or unsubstituted piperidyl, substituted or unsubstituted piperazinyl, $-SR^{3A}$, and $NR^{3B}R^{3C}$, wherein R^{3A} and R^{3C} are substituted or unsubstituted (C_1-C_5) alkyl.

4. The compound of claim 3, wherein

R^3 is a member selected from substituted or unsubstituted piperidyl, and substituted or unsubstituted piperazinyl, wherein R^{3A} and R^{3C} are substituted or unsubstituted (C_1-C_5) alkyl.

5. The compound of claim 3, wherein

X is =N-;

R^1 is hydrogen; and

R^3 is $-SR^{3A}$.

6. The compound of claim 1, wherein

m is 1;

R^1 is a member selected from hydrogen, substituted or unsubstituted phenyl, substituted or unsubstituted -NH-phenyl, and substituted or unsubstituted -O-phenyl, wherein R^1 is attached to the 3'-position or the 4'-position;

R^2 is methyl; and

R^3 is a member selected from $-NH_2$ and substituted or unsubstituted piperazinyl.

7. The compound of claim 6, wherein

X is =CH-; and

R^1 is a member selected from 3'-NH-phenyl, 4'-NH-phenyl, 3'-O-phenyl, 4'-O-phenyl, and 3'-phenyl.

8. The compound of claim 7, wherein R^1 is a member selected from 3'-NH-phenyl, 4'-NH-phenyl, and 3'-phenyl.

9. The compound of claim 1, wherein

m is 1;

X is =CH-

R^1 is a member selected from Br and substituted or unsubstituted 4'-NH-phenyl;

R^2 is methyl;

R^3 is a member selected from $-NH_2$ and substituted or unsubstituted piperazinyl; and

wherein if R^1 is Br, then R^3 is substituted or unsubstituted piperazinyl.

10. The compound of claim 1, wherein

m is 1;

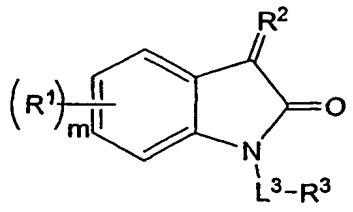
X is =N-;

R^1 is a member selected from hydrogen and $-L^1NNHC(S)NH_2$, wherein L^1 is a member selected from substituted or unsubstituted alkylene and substituted or unsubstituted heteroalkylene;

R^2 is methyl; and

R^3 a member selected from $-NH_2$ and $-SR^{3A}$, wherein R^{3A} is substituted or unsubstituted (C_1-C_5) alkyl.

11. A compound having the formula:



(III)

wherein

m is an integer from 1 to 3;

R^1 is a member selected from hydrogen, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or

unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl;

R^2 is a member selected from =O and =N-NH-C(Q)-$NR^{2A}R^{2B}$, wherein

Q is a member selected from =S and =O;

R^{2A} and R^{2B} are members independently selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl;

L^3 is a member selected from substituted or unsubstituted alkylene, substituted or unsubstituted heteroalkylene, substituted or unsubstituted cycloalkylene, substituted or unsubstituted heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene;

R^3 is a member selected from substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted quinolinyl, and $NR^{3A}R^{3B}$, wherein

R^{3A} and R^{3B} are members independently selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl.

12. The compound of claim 11, wherein

m is an integer from 1 to 2;

R^1 is a member selected from hydrogen, halogen, and unsubstituted alkyl;

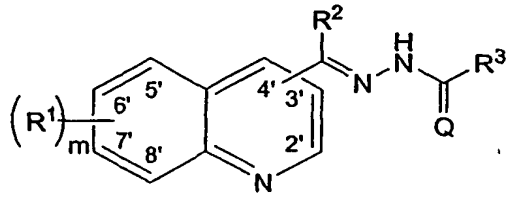
Q is =S;

R^{2A} and R^{2B} are hydrogen;

L^3 is a member selected from unsubstituted alkylene, unsubstituted heteroalkylene, and unsubstituted heterocycloalkylene; and

R^3 is a member selected from unsubstituted quinolinyl, quinolinyl substituted with a halogen, substituted or unsubstituted piperidinyl, substituted or unsubstituted morpholinyl, substituted or unsubstituted piperazinyl, and $NR^{3A}R^{3B}$, wherein R^{3A} and R^{3B} are unsubstituted alkyl.

13. A compound having the formula:



(IV)

Q is a member selected from =S and =O;

m is an integer from 1 to 6;

R^1 is a member independently selected from hydrogen, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, $-OR^{1A}$, and $-NR^{1B}R^{1C}$, wherein

R^{1A} is a member selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl;

R^{1B} and R^{1C} are members independently selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl;

R^2 is substituted or unsubstituted alkyl;

R^3 is a member selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, $-SR^{3A}$, and $-NR^{3B}R^{3C}$, wherein

R^{3A} is a member selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl, and

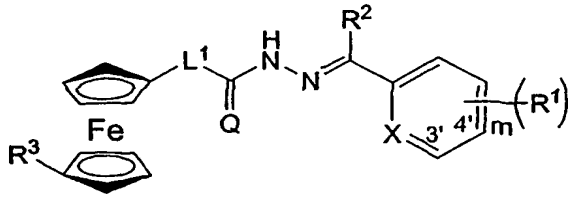
R^{3B} and R^{3C} are members independently selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted

heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl, wherein

R^{3B} and R^{3C} are optionally joined together to form a substituted or unsubstituted ring with the nitrogen to which they are attached; and

wherein if R^1 is hydrogen and Q is =S, then only hydrogen or R^1 is attached to the 2' position.

14. A compound having the formula



(V)

wherein

Q is a member selected from =S and =O;

m is an integer from 1 to 3;

X is a member selected from =CH- and =N-;

L^1 is a member selected from substituted or unsubstituted alkylene, substituted or unsubstituted heteroalkylene, substituted or unsubstituted cycloalkylene, substituted or unsubstituted heterocycloalkylene, substituted or unsubstituted arylene, and substituted or unsubstituted heteroarylene;

R^1 is a member independently selected from hydrogen, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, $-OR^{1A}$, and $-NR^{1B}R^{1C}$, wherein

R^{1A} is a member selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl;

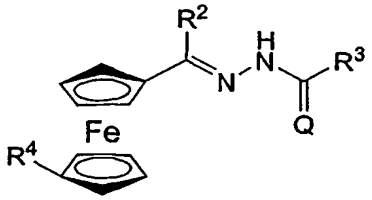
R^{1B} and R^{1C} are members independently selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or

unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl;

R^2 is substituted or unsubstituted alkyl;

R^3 is a member selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl.

15. A compound having the formula



(VII)

Q is a member selected from =S and =O;

R^2 is substituted or unsubstituted alkyl;

R^3 is a member selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, $-SR^{3A}$, and $-NR^{3B}R^{3C}$, wherein

R^{3A} is a member selected from substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl, and

R^{3B} and R^{3C} are members independently selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, and substituted or unsubstituted heteroaryl, wherein

R^{3B} and R^{3C} are optionally joined together to form a substituted or unsubstituted ring with the nitrogen to which they are attached.

R^4 is a member selected from hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted heteroalkyl, substituted or unsubstituted cycloalkyl, substituted or unsubstituted heterocycloalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl;

wherein if R^4 is hydrogen, then R^3 is not $-NR^{3B}R^{3C}$.

16. A pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 1 and a physiologically acceptable carrier.

17. The pharmaceutical composition of claim 16, the composition comprising a therapeutically effective amount of a second anti-parasitic compound.

18. The pharmaceutical composition of claim 16, wherein the composition is formulated for oral administration.

19. The pharmaceutical composition of claim 16, wherein the composition is formulated for parenteral administration.

20. A method of treating a parasitic disease, said method comprising the step of administering to a patient in need thereof a sufficient amount of a pharmaceutical composition according to claim 16, wherein said compound is contacted with a parasite thereby treating said parasitic disease.

21. The method of claim 20, wherein said parasite is selected from the group consisting of *Trypanosoma, Plasmodium, Leishmania,* and *Trichomonas* and said parasitic disease is selected from the group consisting of Chagas' disease, African sleeping sickness, nagana, malaria, Leishmaniasis, and STD.

22. The method of claim 21, wherein said parasite is *Trichomonas* and said parasitic disease is STD.

23. The method of claim 21, wherein said parasite is *Plasmodium* and said parasitic disease is malaria.

24. The method of claim 21, wherein said parasite is *Leishmania* and said parasitic disease is Leishmaniasis.

25. The method of claim 21, wherein said parasite is *Trypanosoma* and said parasitic disease is Chagas' disease, African sleeping sickness, or nagana.

26. The method of claim 21, wherein the patient is a human.

27. A method of preventing a parasitic infection, said method comprising the step of administering to a patient in need thereof a sufficient amount of a pharmaceutical composition according to claim 16, wherein said compound is contacted with a parasite thereby preventing said parasitic disease.

28. The method of claim 27, wherein said parasite is selected from the group consisting of *Trypanosoma, Plasmodium, Leishmania,* and *Trichomonas*, and said parasitic disease is selected from the group consisting of Chagas' disease, African sleeping sickness, nagana, malaria, Leishmaniasis, and trichomoniasis.

29. The method of claim 28, wherein said parasite is *Trichomonas* and said parasitic disease is STD.

30. The method of claim 28, wherein said parasite is *Plasmodium* and said parasitic disease is malaria.

31. The method of claim 28, wherein said parasite is *Leishmania* and said parasitic disease is Leishmaniasis.

32. The method of claim 28, wherein said parasite is *Trypanosoma* and said parasitic disease is Chagas' disease, African sleeping sickness, or nagana.

33. The method of claim 28, wherein the patient is a human.

34. A method of treating or preventing cancer, said method comprising the step of:

administering to a patient in need thereof a sufficient amount of a pharmaceutical composition comprising a compound of claim 16.

35. A method of treating or preventing African sleeping sickness or nagana, said method comprising the step of administering to a patient in need thereof a sufficient amount of a pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 3, wherein said compound is contacted with a *Trypanosoma brucei* parasite thereby treating or preventing African sleeping sickness or nagana.

36. A method of treating or preventing malaria, said method comprising the step of administering to a patient in need thereof a sufficient amount of a pharmaceutical

composition comprising a therapeutically effective amount of a compound of claim 9, wherein said compound is contacted with a *Plasmodium falciparum* parasite thereby treating or preventing malaria.

37. A method of treating or preventing malaria, said method comprising the step of administering to a patient in need thereof a sufficient amount of a pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 10, wherein said compound is contacted with a *Plasmodium falciparum* parasite thereby treating or preventing malaria.

38. A method of treating or preventing Chagas' Disease, said method comprising the step of administering to a patient in need thereof a sufficient amount of a pharmaceutical composition comprising a therapeutically effective amount of a compound of claim 6, wherein said compound is contacted with a *Trypanosoma cruzi* parasite thereby treating or preventing Chagas' Disease.